

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of ~~associating a resource with a geographic location to which the resource relates, the method~~ comprising:

determining geographic locations ~~location information~~ associated with users that access ~~[[the]]~~ a resource; ~~[[and]]~~

performing a cluster analysis ~~based on the location information of the geographic~~ locations to locate a cluster of the geographic locations; and

storing an indication that the resource is associated with a geographic area corresponding to the located cluster.
2. (Original) The method of claim 1, wherein the resource is a web advertisement.
3. (Original) The method of claim 1, wherein the resource is a web site.
4. (Currently Amended) The method of claim 1, wherein the geographic locations are derived from ~~location information includes~~ network addresses.
5. (Cancelled)

6. (Currently Amended) A method of providing documents comprising:
collecting location information associated with first users that access a resource;
performing an analysis on the collected location information to determine the
geographic relevance of the resource;
determining second location information associated with a second user; and
~~determining whether to provide~~ providing a document associated with the
resource to the second user based, at least in part, on a matching of the geographic
relevance of the resource to the second location information.

7. (Original) The method of claim 6, wherein the collecting location
information further comprises collecting location information from multiple first users,
and wherein performing an analysis further comprises performing a cluster analysis.

8. (Original) The method of claim 6, wherein the resource is a web
document.

9. (Original) The method of claim 8, wherein the document associated with
the resource is an advertisement.

10. (Original) The method of claim 6, wherein the document associated with
the resource is the same as the resource.

11. (Original) The method of claim 6, wherein the location information includes network addresses of the first users.
12. (Original) The method of claim 11, further comprising:
mapping the network addresses to two-dimensional coordinate information.
13. (Original) The method of claim 6, wherein collecting the location information associated with the first users includes collecting at least one of location information stored in cookies, location information derived from search terms entered by the user, and location information derived from browsing patterns.
14. (Currently Amended) A method of associating a web site resource with a geographic location to which the web site resource relates, the method comprising:
determining a plurality of locations associated with users that access the web site resource; and
analyzing, via a cluster analysis, the determined locations to determine geographical relevance of the web site; and
storing the determined geographical relevance of the web site.
15. (Cancelled)
16. (Original) The method of claim 14, wherein the plurality of locations are network addresses of the users.

17. (Currently Amended) The method of claim 16, further comprising:
mapping the plurality of network addresses to two-dimensional coordinate information, wherein analyzing the determined locations includes performing [[a]] the cluster analysis based on the two-dimensional coordinate information.

18. (Currently Amended) The method of claim 14, wherein determining the plurality of locations associated with the users includes at least one of using location information stored in cookies, using account information of the users, using search terms entered by the user, and using browsing patterns of the users.

19. (Currently Amended) The method of claim 14, wherein determining the plurality of locations associated with the users includes collecting location information using an application running locally to the users.

20. (Original) The method of claim 19, wherein the applications include at least one of a browser tool bar, a browser plug-in, and a browser.

21. (Original) The method of claim 19, wherein the location information includes at least one of IP addresses of the users and network addresses of resources accessed by the users.

22. (Original) The method of claim 17, wherein mapping the plurality of network addresses to location information includes:

associating the network addresses with a two-dimensional point defined by latitude and longitude values estimated from the network addresses.

23. (Original) The method of claim 17, wherein mapping the plurality of network addresses to location information includes:

mapping the network addresses to cities that are estimated to be closest to physical locations associated with the network addresses, and

mapping the cities to a two-dimensional point defined by latitude and longitude values.

24. (Currently Amended) The method of claim 17, wherein performing [[a]] the cluster analysis further includes:

determining whether the plurality of two-dimensional coordinates tends to ~~location information tends~~ to form one or more clusters.

25. (Currently Amended) The method of claim [[17]] 24, wherein performing [[a]] the cluster analysis further includes:

associating geographic location information with the resource based on the one or more clusters.

26. (Original) The method of claim 25, further comprising:

determining a probability that a location associated with a particular user is within the geographic location associated with the web resource based on a statistical model applied to the one or more clusters.

27. (Currently Amended) The method of claim 17, wherein performing [[a]] the cluster analysis of the plurality of network addresses further includes:

normalizing the determined locations ~~location information~~ based on populations associated with locations ~~in~~ of the determined locations ~~location information~~.

28. (Currently Amended) The method of claim [[16]] 17, wherein the plurality of network addresses are Internet Protocol (IP) addresses.

29. (Original) The method of claim 28, wherein dynamic IP addresses are given less weight in the cluster analysis than static IP address.

30. (Currently Amended) A computer-implemented search engine comprising:

a document selector component configured to locate a set of documents relevant to a search query, the document selector component basing the determination of relevancy at least in part on geographic relevance information associated with documents in the set of documents; and

a geographic relevance component configured to generate the geographic relevance information associated with the documents in the set of documents by

gathering a plurality of network addresses of users that access the documents in the set of documents, mapping the plurality of network addresses to location data points, and performing a cluster analysis on the location data points to locate clusters of the located data points, the located clusters indicating areas of geographic relevance,

where the computer-implemented search engine returns search results to a user based on the set of relevant documents.

31. (Currently Amended) The computer-implemented search engine of claim 30, wherein the geographic relevance component performs the cluster analysis on the location data points based on a determination of whether the location data points tend to form one or more clusters. [[.]]

32. (Currently amended) The computer-implemented search engine of claim 31, wherein the geographic relevance component additionally determines a probability that a location associated with a user that submitted the search query is geographically relevant to the documents in the set of documents based on a statistical model applied to the one or more clusters.

33. (Currently amended) The computer-implemented search engine of claim 30, wherein, when performing the cluster analysis on the location data points, the geographic relevance component is further configured to normalize the location data points.

34. (Currently amended) The computer-implemented search engine of claim 33, wherein the normalizing is based at least in part on population associated with the location data points.

35. (Currently Amended) A method for determining [[the]] a probability that a user submitting a search query is geographically relevant to a network resource, the method comprising:

determining a geographic location associated with the user;

acquiring geographic relevance information for the network resource, the geographic relevance information including information that defines at least one cluster associated with the network resource, the information defining the at least one cluster including at least a center point of the cluster and a measure of dispersion of the cluster;
~~and~~

determining the probability that the user is geographically relevant to the network resource based on a statistical model applied to the at least one cluster; and

returning search results to the user based on the determined probability.

36. (Original) The method of claim 35, wherein the determination of geographic location associated with the user is based on terms in the search query.

37. (Original) The method of claim 35, wherein the statistical model is based on a Gaussian model.

38. (Original) The method of claim 35, wherein acquiring the geographic relevance information for the network resource includes:

gathering a plurality of network addresses of users that access the network resource;

mapping the plurality of network addresses to location data points; and
performing a cluster analysis on the location data points to generate the geographic relevance information.

39. (Original) The method of claim 35, wherein the determination of geographic relevance of the user is based on web access patterns of the user.

40. (Currently Amended) The method of claim 38, wherein mapping the plurality of network addresses to the location data points includes:

associating the gathered network addresses with two-dimensional points defined by latitude and longitude values estimated from the network address.

41. (Currently Amended) The method of claim 38, wherein mapping the plurality of network addresses to the location data points further includes:

mapping the network addresses to cities that are estimated to be close to physical locations associated with the network addresses; and

mapping the cities to two-dimensional points defined by latitude and longitude values.

42. (Currently Amended) The method of claim 38, wherein performing [[a]]
the cluster analysis further includes:

determining whether the location data points tend to form one or more clusters.

43. (Currently Amended) The method of claim 42, wherein performing [[a]]
the cluster analysis further includes:

associating geographic location information with the network resource based on
the one or more clusters.

44. (Original) The method of claim 38, wherein the plurality of network
addresses are Internet Protocol (IP) addresses.

45. (Currently Amended) A computer-readable medium for associating a
network resource with a geographic location to which the network resource relates, the
computer readable medium containing programming instructions that when executed by a
processor cause the processor to:

gather a plurality of network addresses of users that access the network resource;

map the plurality of network addresses to data points that correspond to
geographic locations;

perform a cluster analysis on the data points to locate one or more clusters of the
data points; [[and]]

determine a geographic location for the network resource based on the cluster
analysis; and

store an indication that the network resource is associated with the determined geographic location.

46. (Original) The computer-readable medium of claim 45, wherein the data points are each defined by latitude and longitude values.

47. (Currently Amended) A computer-implemented device for associating a network resource with a geographic location to which the network resource relates, the computer-implemented device comprising:

means for gathering a plurality of network addresses of users that access the network resource;

means for mapping the plurality of network addresses to data points that correspond to geographic locations; [[and]]

means for performing a cluster analysis on the data points to locate one or more clusters of the data points;

means for ~~analyzing the plurality of data points to determine~~ determining a geographic relevance of the [[web]] network resource based on the located one or more clusters; and

means for storing an indication of the geographic relevance of the network resource.